The Need to Reduce Mobile Source Emissions in the South Coast Air Basin

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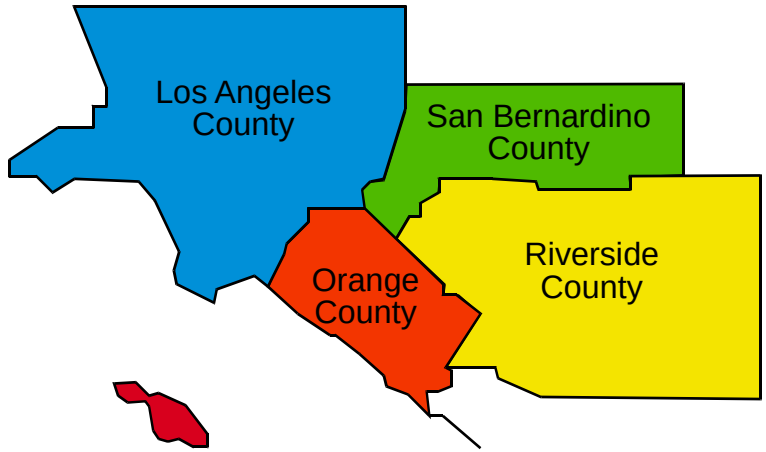
Diesel Engine Emissions Reduction (DEER) Conference
Coronado, CA
August 29, 2004

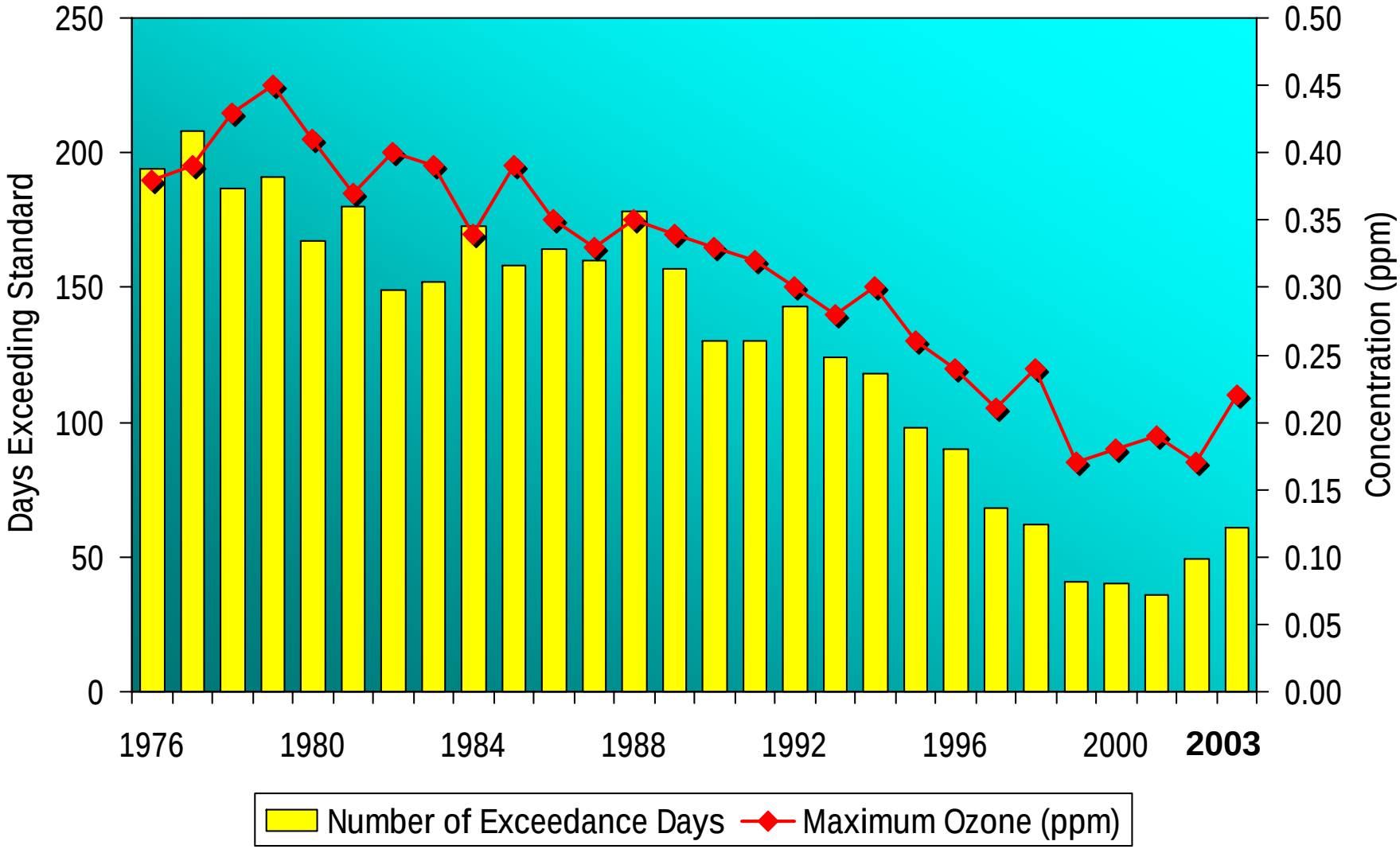
SCAQMD Background Setting

- South Coast Air Basin
  - 4-county region
  - 16 million people
  - 261,000 diesel vehicles
  - 10 million gasoline vehicles
  - 12-member Governing Board

    9 elected / 3 appointed by elected officials



Ozone Air Quality Trends

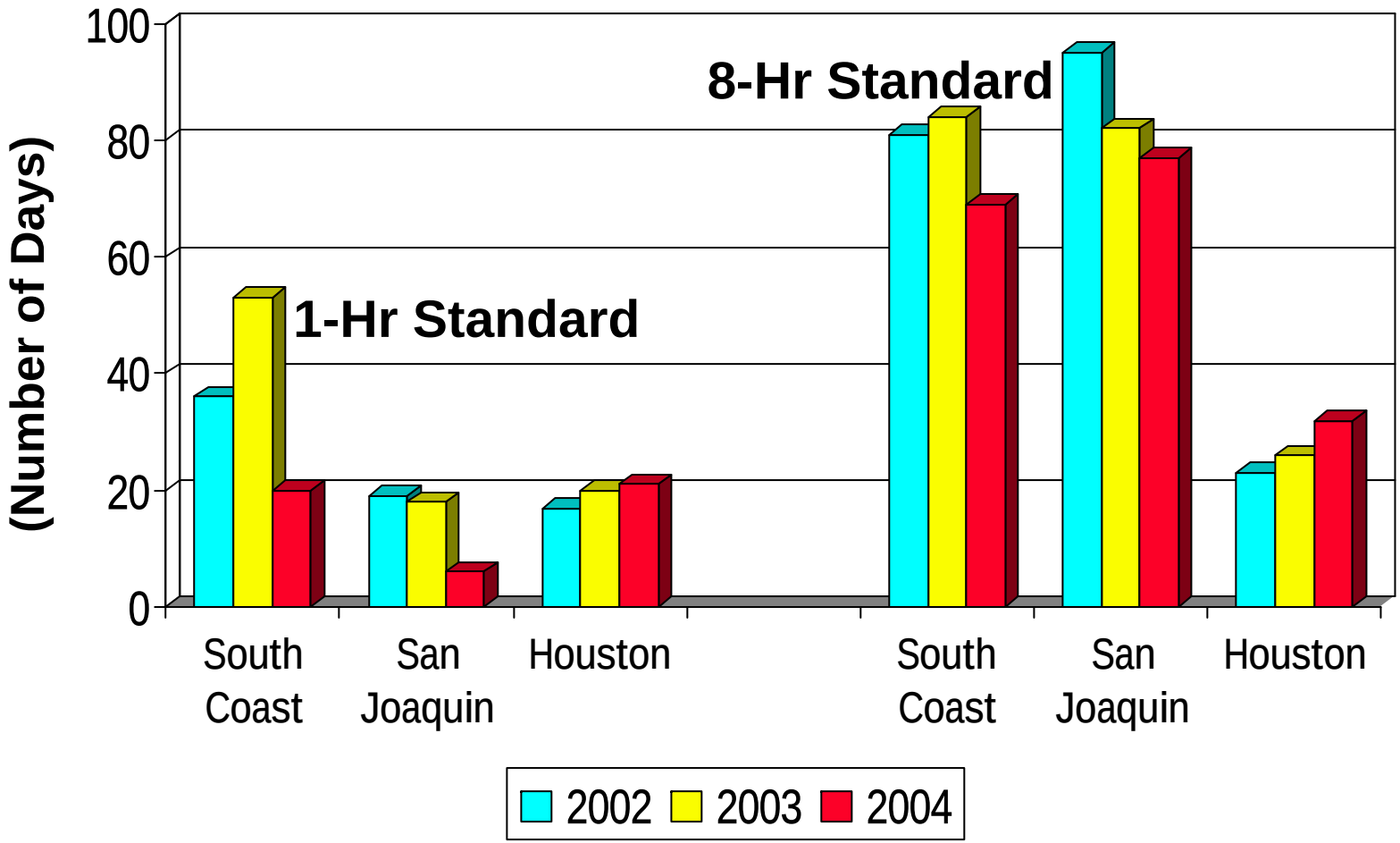


2002-2004 Ozone Air Quality Comparison
(Through August 23 of Each Year)

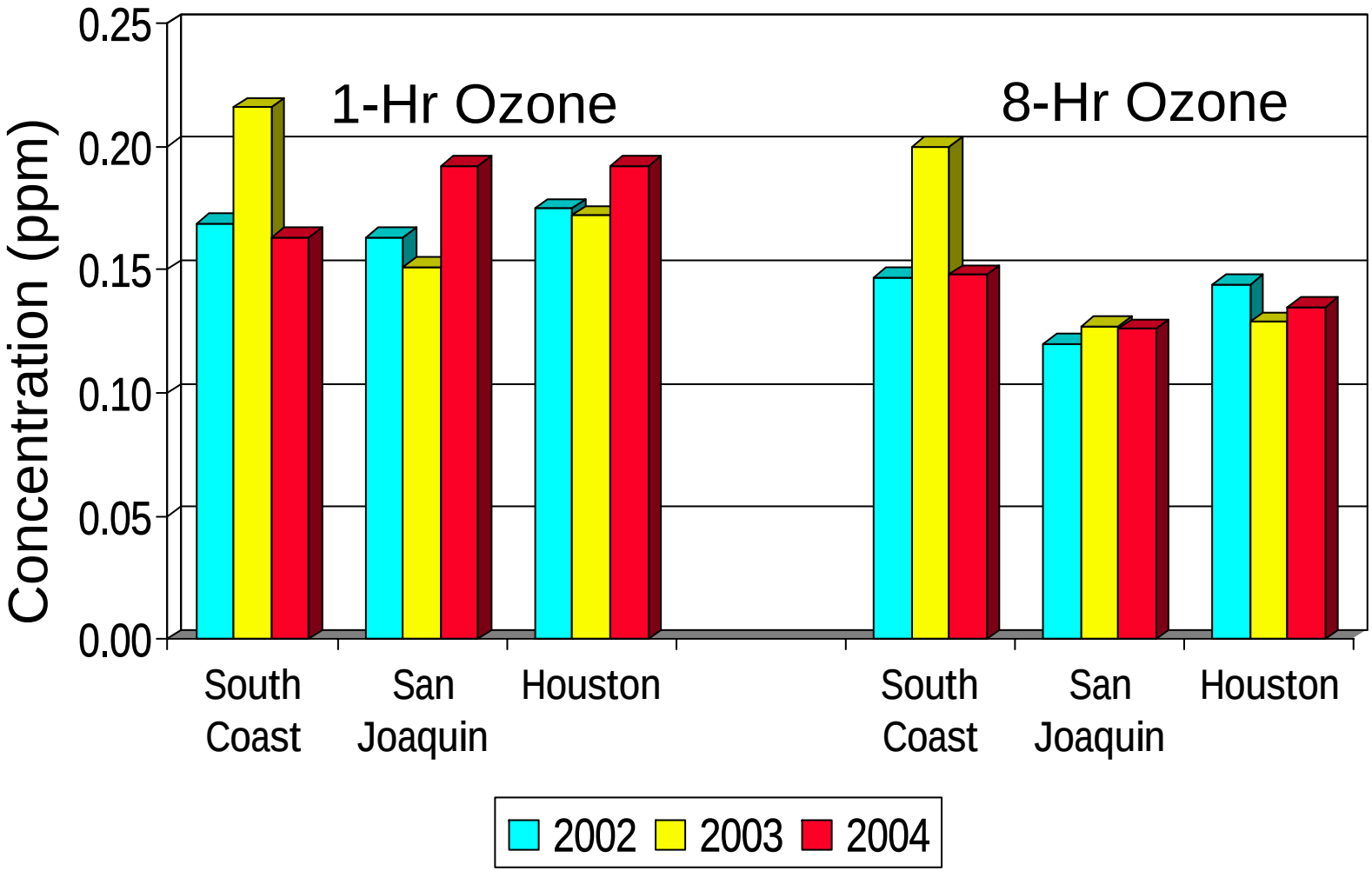
Location	Days Exceeding 1-Hour			Days Exceeding 8-Hour			1-Hour Peak (ppm)			8-Hour Peak (ppm)		
	2004	2003	2002	2004	2003	2002	2004	2003	2002	2004	2003	2002
South Coast AirBasin	20	53	36	69	84	81	0.163	0.216	0.169	0.148	0.200	0.147
San Joaquin Valley	6	18	19	77	82	95	0.155	0.151	0.163	0.126	0.127	0.120
Houston	21	20	17	32	26	23	0.192	0.172	0.175	0.135	0.129	0.144

Number of Days of Exceedances of the Federal Ozone Air Quality Standard

(Through August 23 of Each Year)



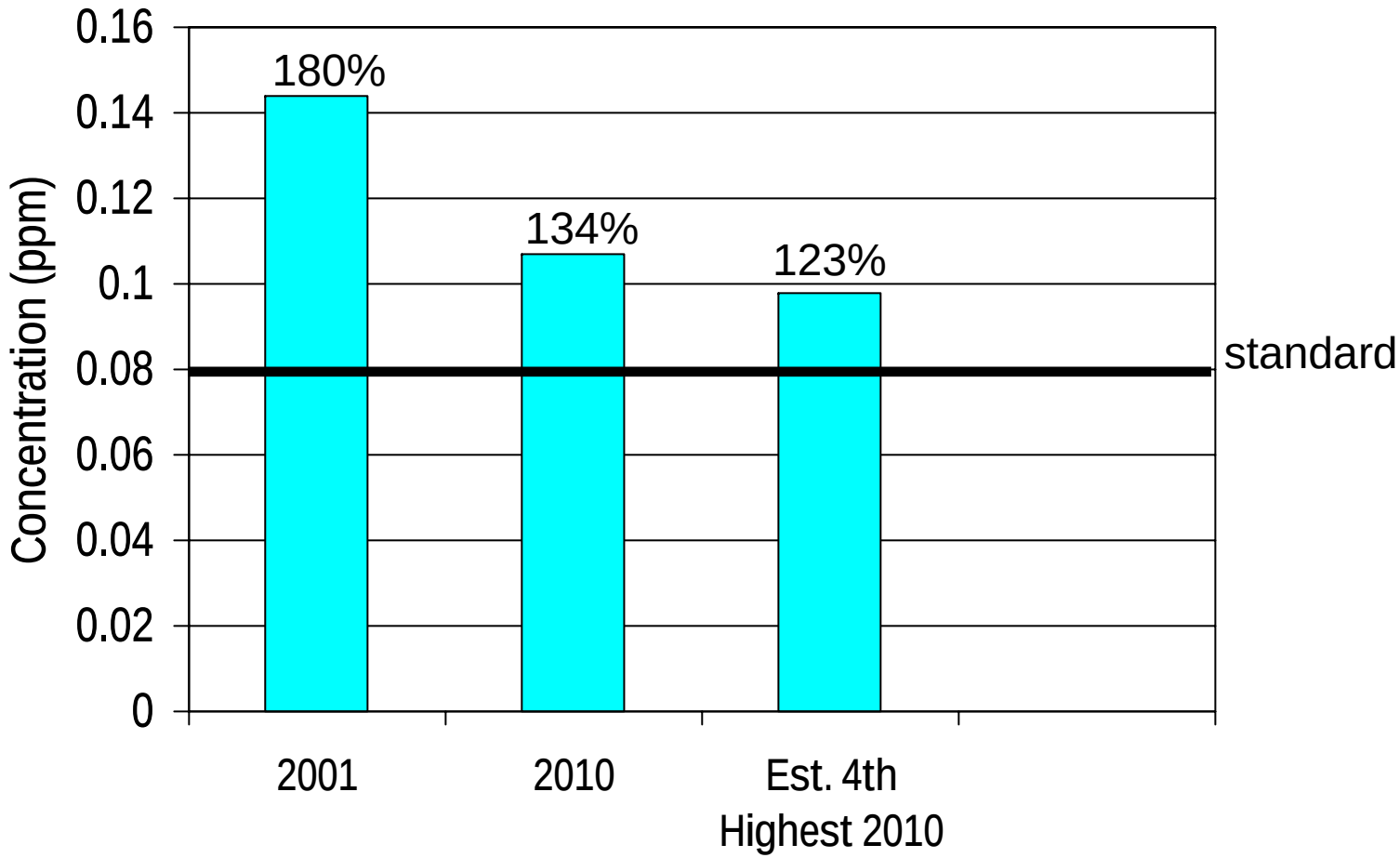
2002-2004 Peak Ozone Concentrations
(Through August 23 of Each Year)



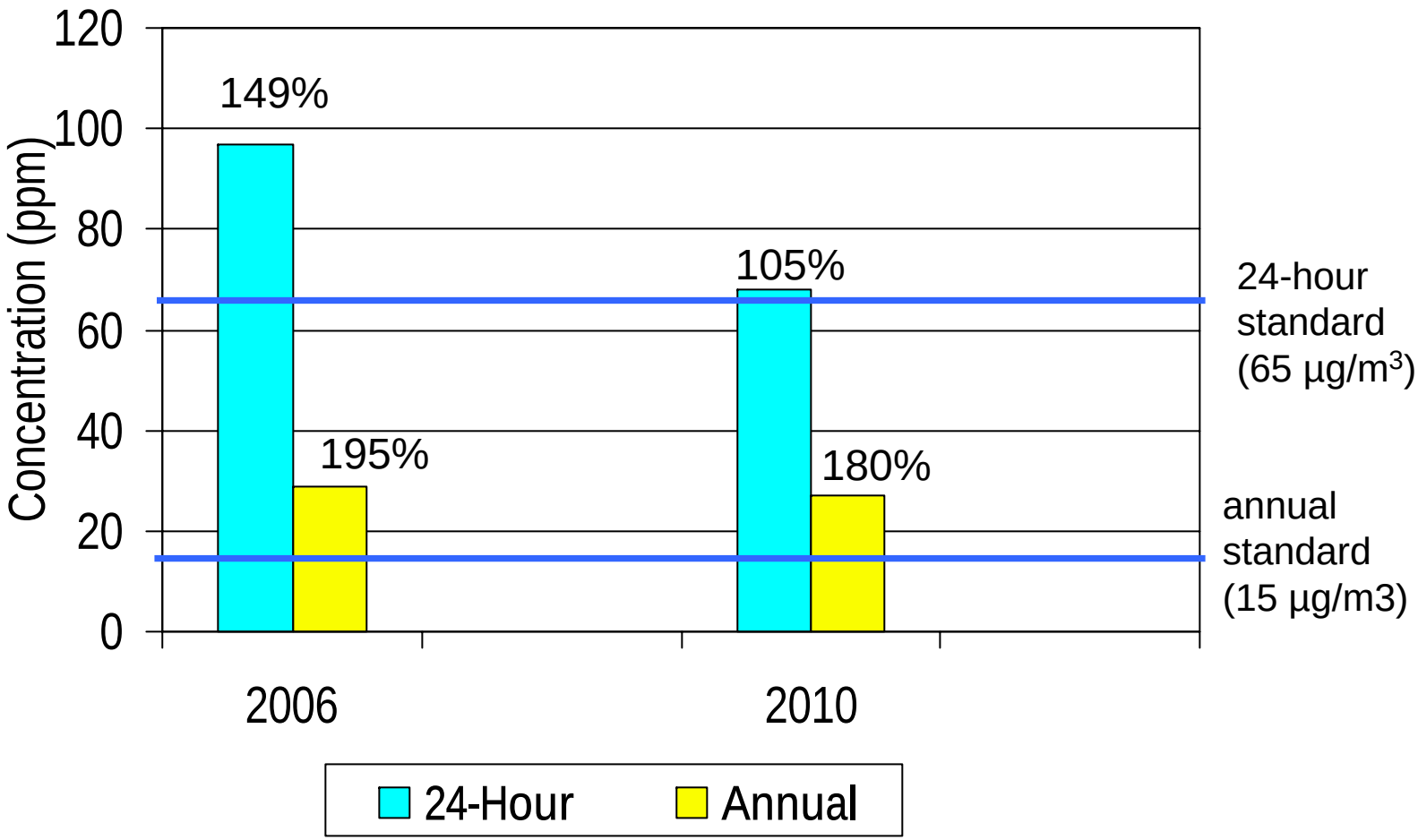
SCAQMD Classifications/Attainment Dates for 8-Hour Ozone Standard

- South Coast Air Basin Classified as "Severe-17" - 2021 Attainment Date
- Coachella Valley Classified as "Serious" – 2013 Attainment Date
- 8-Hour Ozone SIP Due 2007

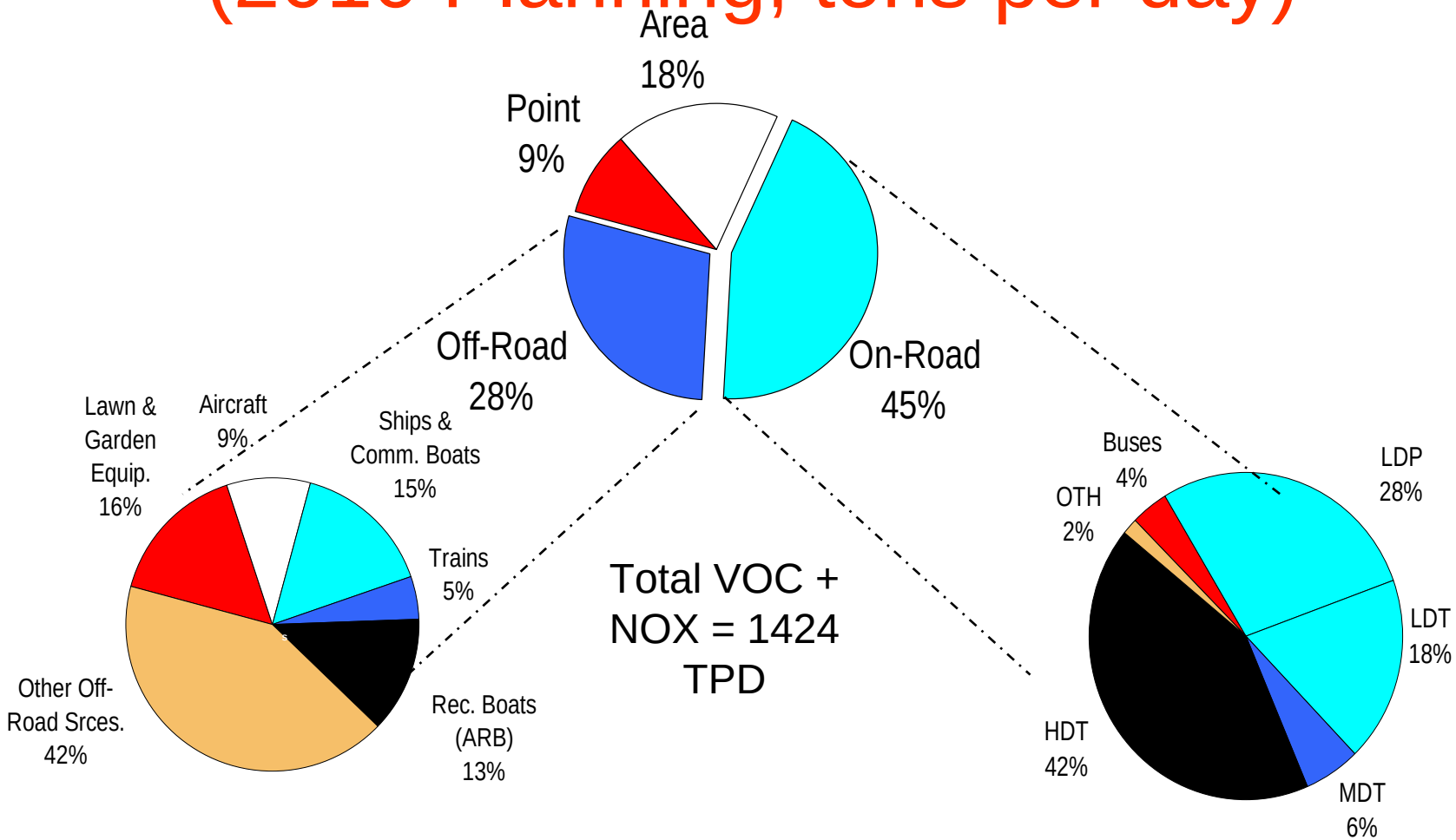
Current and Predicted 8-Hour Ozone Concentrations



Current and Predicted PM2.5 Concentrations



Mobile Source Categories
(2010 Planning, tons per day)



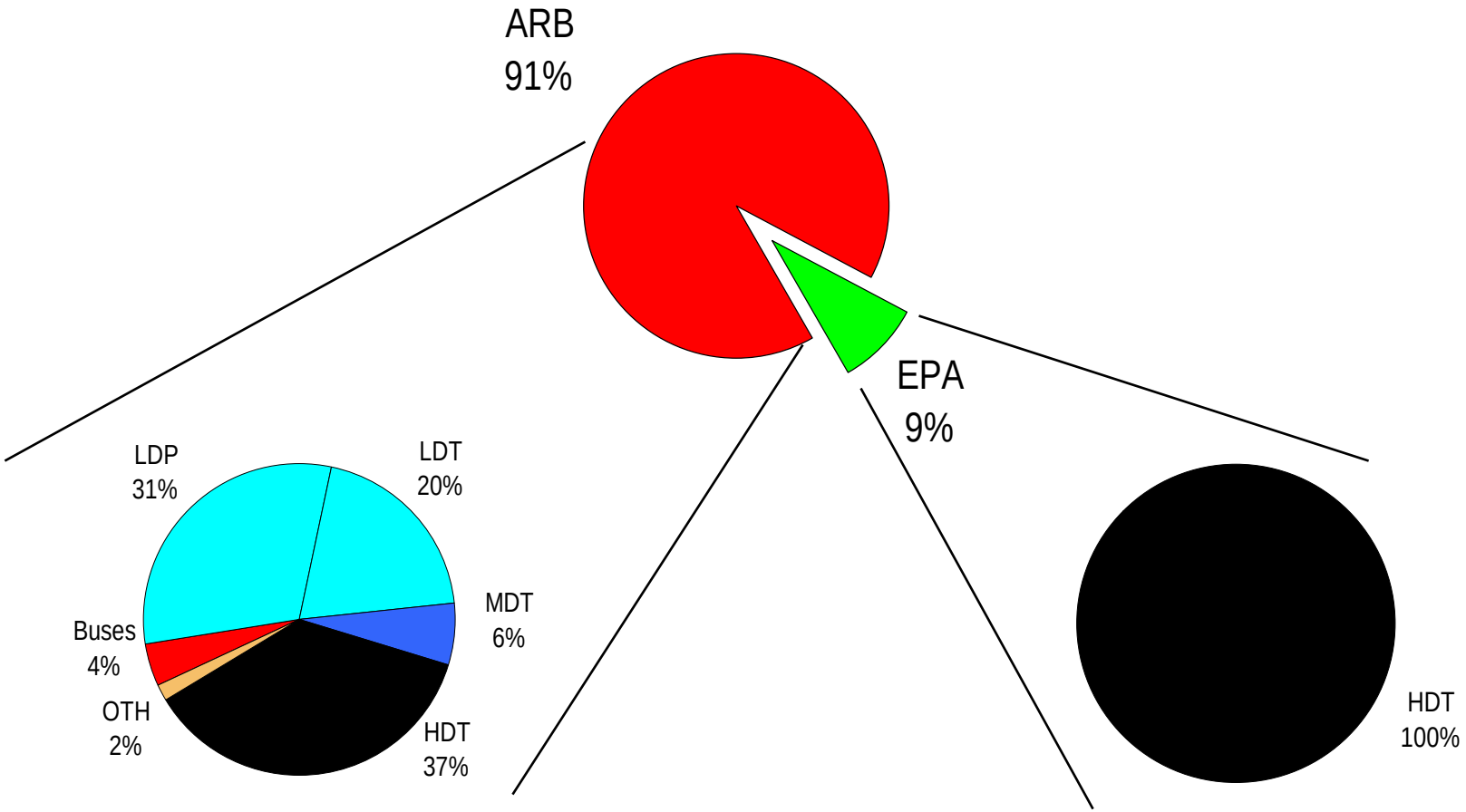
Total VOC + NOX = 1424 TPD

Total Off-Road = 403 TPD

Total On-Road = 627 TPD

On-Road Mobile Source Categories

(2010 Planning, Total VOC+NOX = 627 tpd)

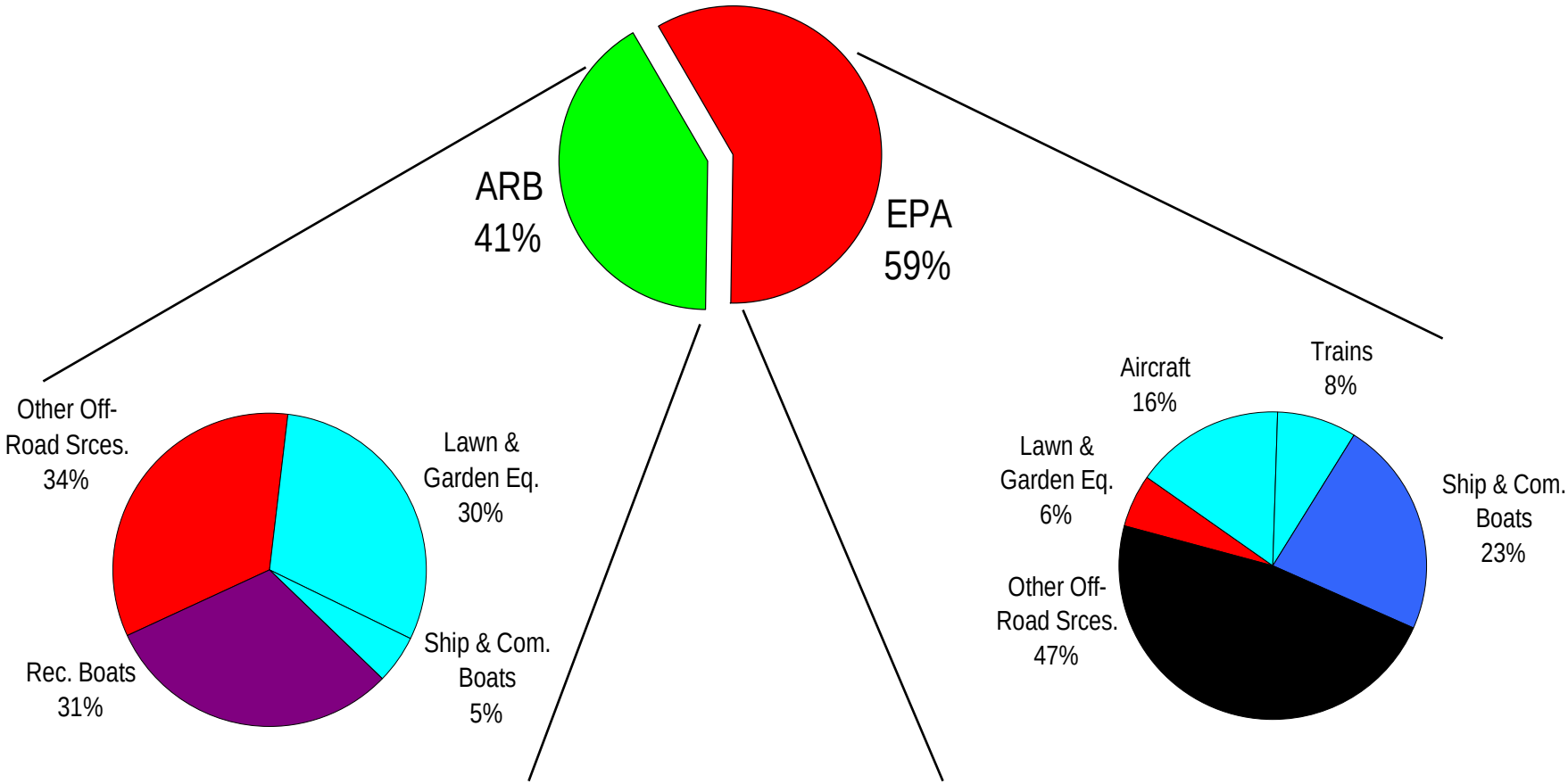


Total ARB On-Road = 571 TPD

Total EPA On-Road = 56 TPD

Off-Road Mobile Source Categories

(2010 Planning, Total VOC+NOX = 403 tpd)



Total ARB Off-Road = 167 TPD

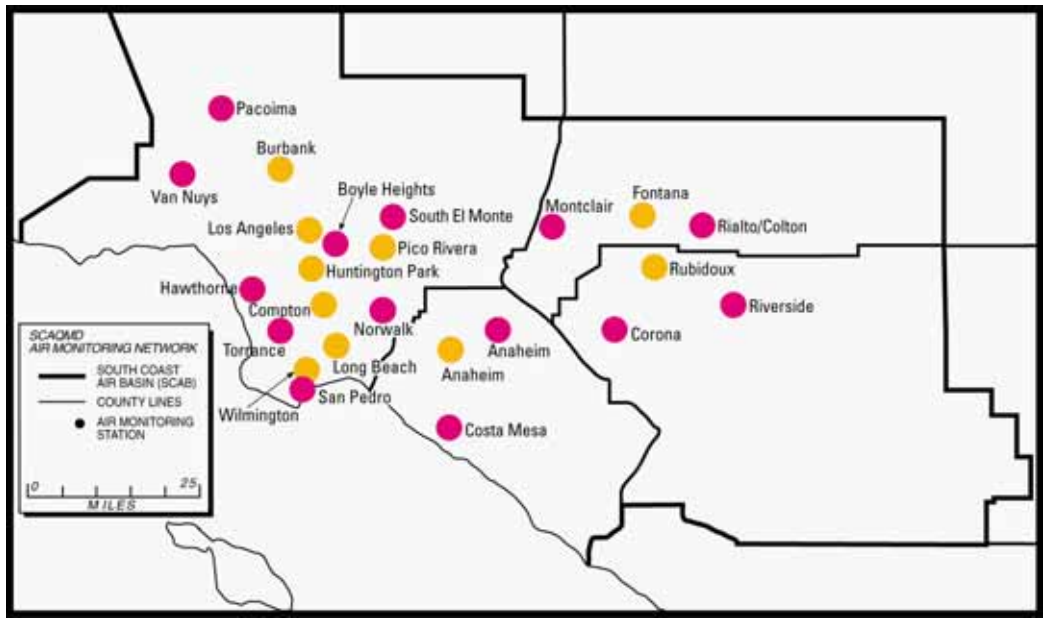
Total EPA Off-Road = 236 TPD

Multiple Air Toxics Exposure Study in the South Coast Air Basin: (MATES-II)

South Coast Air Quality Management District

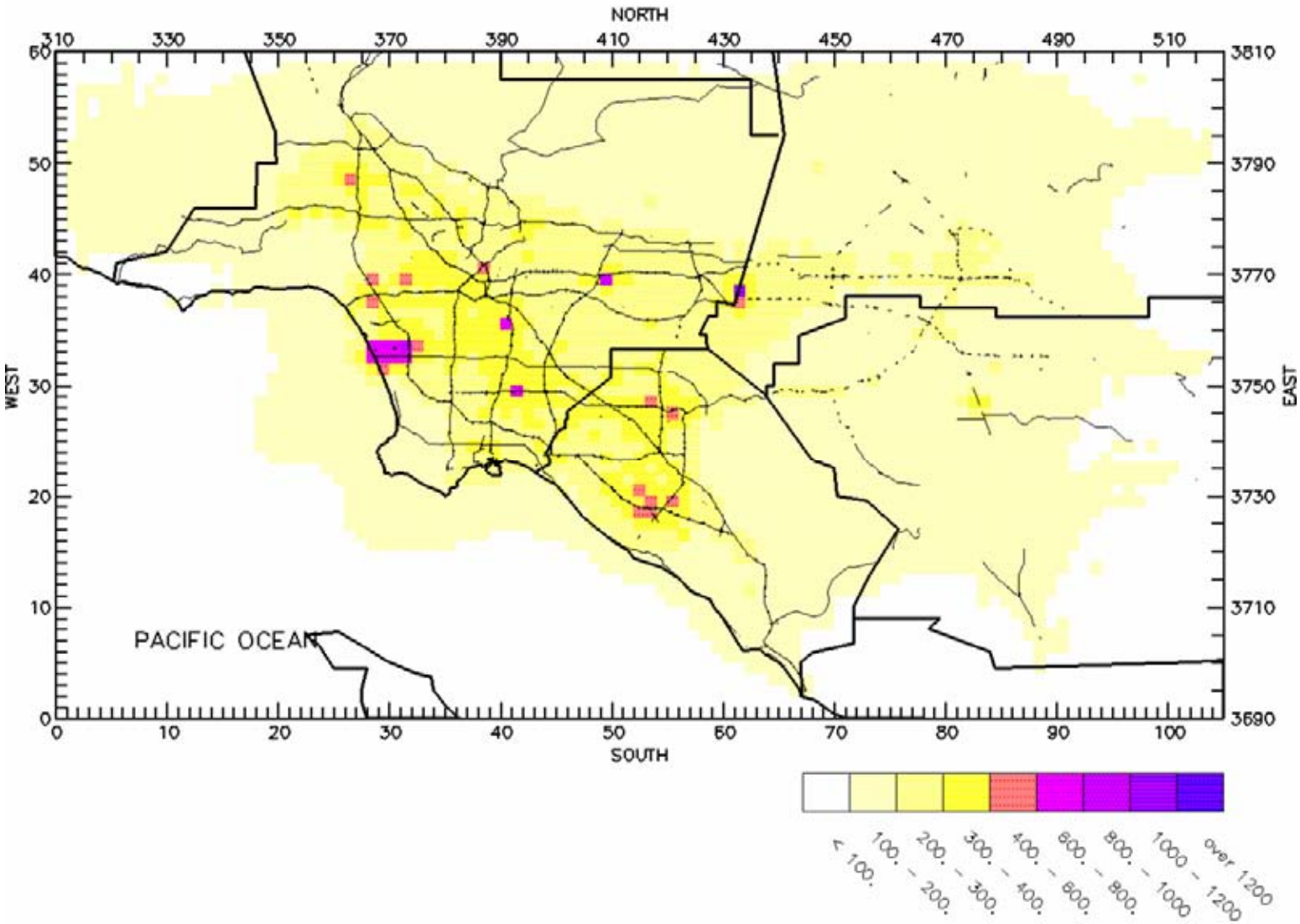
MATES-II Monitoring

- One Year Toxics Monitoring at 10 Sites
- Complementary One-Month Sampling
  - -14 Communities
- Over 30 Toxic Pollutants Measured
  - Gaseous
  - Particulates

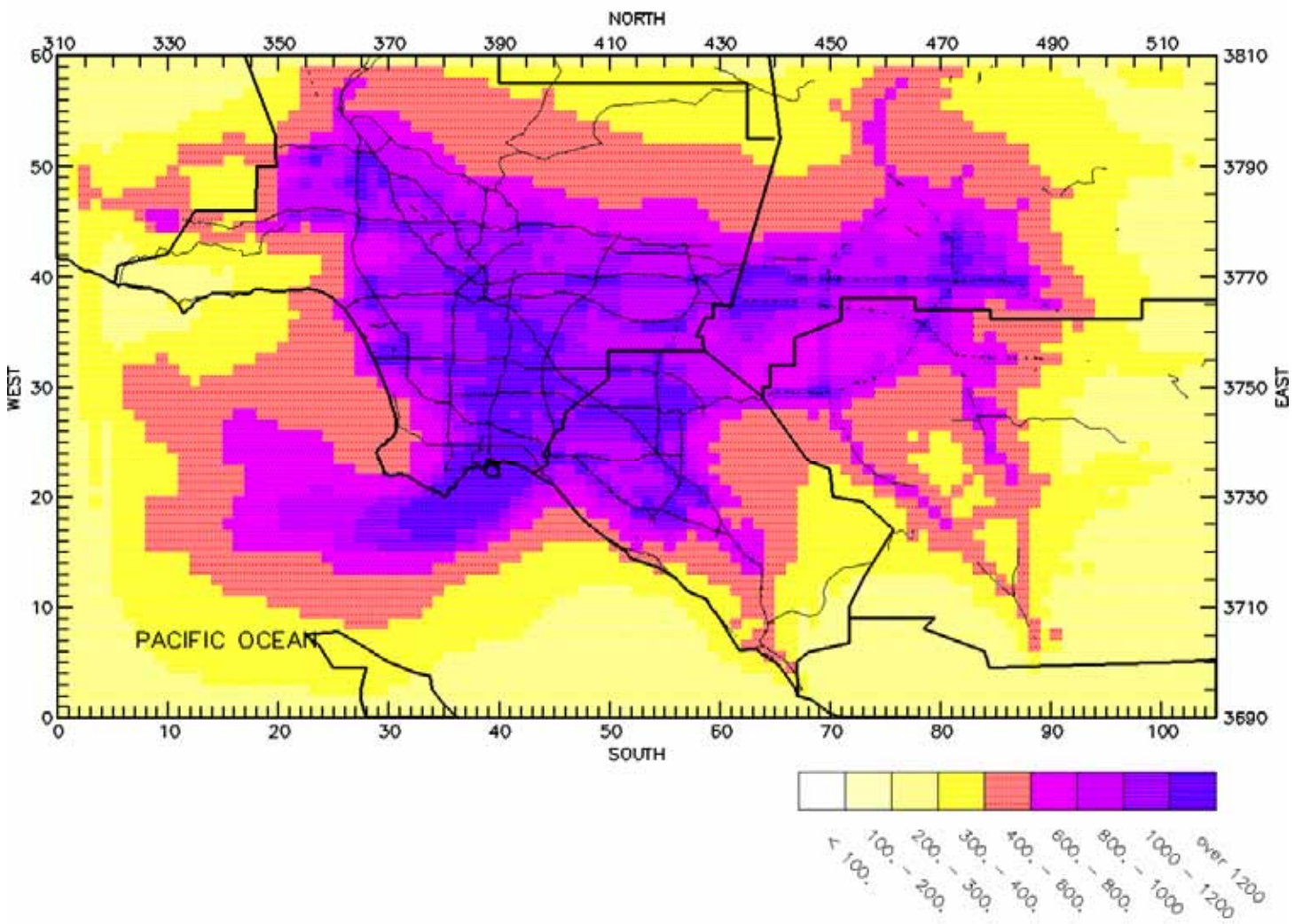


● Fixed Sites ● Microscale Sites

Model-Estimated Risk Excluding Diesel Sources



Model-Estimated Risk from All Emission Sources



MATES-III Goals

- Assess Current Air Toxics Levels
- Determine Community Level Gradients
- Update Risk Characterization
- Air Monitoring (April 2004 – Summer 2005)

MATES-III Components

- Ambient Measurements
- Emissions Inventory Update
- Dispersion Modeling
- Risk Characterization

MATES III Enhancements

- Additional Substances
  - Naphthalene
    - Potential for Significant Health Risk (OEHHA review)
    - Limited Sampling – Outsource analyses
  - Limited Sampling for “Markers” of Diesel and Other PM Sources
- Updated Analytical Methods
- More Frequent Sampling

SCAQMD Fleet Vehicle Rules

- 7 Rules Covering Public and Some Private Fleets
- Purchase Cleanest Vehicles Available
- Alternative Fuel Application Niches
- Need for Feasible Implementation
- Long-Term Perspective









SCAQMD Fleet Vehicle Rules

- 1191 - Light- and Medium-Duty Public Fleets
- 1192 -Transit Buses
- 1193 - Refuse Collection Vehicles
- 1194 - Commercial Airport Ground Access
- 1195 - School Buses
- 1196 - Heavy-Duty Public Fleet Vehicles
- 1186.1 - Less-Polluting Sweepers









Fleet Rule Litigation History

- Engine Manufacturers Association (EMA) Challenged AQMD Authority Under Clean Air Act (August 2000)
- U.S. District Court Decision in AQMD Favor (August 28, 2001)
- District Court of Appeals Decision in AQMD Favor (October 24, 2002)
- U.S. Supreme Court Decision (April 28, 2004)

U.S. Supreme Court Decision

- Fleet Rules:
  - Considered Enforcing Emission Standards
  - Do Not Apply to Private Fleets Without Approval from Federal Government
  - Applies to Public Fleet in Regards to Purchasing Choice
    (Lower Courts to Reconsider)
- Does Not Put a Stay on Rule Implementation

Current Implementation Activities

- AQMD Released Advisory to Public and Affected Fleets Regarding Implementation Status (May 26, 2004)
- Continue to Process Exemption Requests From Public Entities
- Continue Funding Programs for Various Fleets
- Encourage Fleets to Continue to Purchase Rule-Compliant Vehicles to Meet Clean Air Needs

Fleet Rule Advisory Notice

- Fleet Rules Remain in Full Force and Effect Relative to Public Fleets
- AQMD Will Not Affirmatively Enforce Fleet Rules Requirements as They Apply to Private Entities
- AQMD Will Not Affirmatively Enforce Fleet Rule Requirements as They Apply to Vehicle Fleets Owned by Private Entities and Contracted by Public Entities
- Continue to Monitor Fleet Purchase Activities by All Affected Fleets

Next Steps

- AQMD Governing Board Request to CARB to Seek Waiver from U.S. EPA (June 4, 2004)
- U.S. District Court to Reconsider Fleet Rule Authority (September 27, 2004)
- Continue to Inform Public and Affected Fleets Regarding Fleet Rule Status

Carl Moyer Program

Total Available: $7,400,000

On- Road	Minimum Allocation
Trucks	$2,000,000
Buses	$1,000,000
Off-road	
Marine	$1,250,000
Construction	$1,250,000
Forklifts	$ 250,000
Locomotives	$1,250,000

Mobile Source Air Pollution Emission Reduction Review Committee

Total Available: $ 12,000,000

- On-road HD vehicles $1,000,000
- Off-road HD vehicles $2,750,000
- Alt fuel advanced tech bus $1,000,000
- CNG school buses $1,000,000
- On-road diesel vehicle replacement $1,750,000
- Law enforcement diesel bus engine $1,000,000
- Local government match $3,500,000

Lower-Emission School Bus Program

Total Available: $ 9,725,000

- CNG School Buses $9,230,000
- Diesel Oxidation Catalyst $250,000

Status of SB 1107

- Signed by Governor on August 16, 2004
- $12 per Year To New Vehicle Registration Fee for Six Years in Lieu of Smog Check Inspection
- $6 of the $12 to Support Carl Moyer Programs
- Provides $61 million Statewide for Moyer programs [AQMD Share Approximately $27.5 MM]
- Additional $6.8 Million Statewide Available for Light Duty Vehicle Gross Emitter Program
- On-going Authorization – No Sunset Provisions

Status of AB 923 (Firebaugh)
(as of August 26, 2004)

Procedural Status:

- Passed Senate Environmental Quality Committee
- Awaiting Senate Appropriations Committee Action
- Must Obtain Assembly Concurrence by August 27, 2004
- Assemblywoman Oropeza Requested the Bill be Re-referred to Transportation Committee Before Consideration by Full Assembly

Current Bill Provisions:

- Additional $2 increase in Vehicle Registration Fee for Moyer Program-type Projects *(subject to local AQMD approval)*
- Added $1.50 tire fee, ($0.75 for Air Quality Programs)
- Covered Sources include All On-Road and Off-Road Vehicles, including Trucks, Locomotives, Marine Vessels and Agricultural Sources
- Aimed at Reducing VOC, NOx and PM

Heavy-Duty Diesel Engine Project

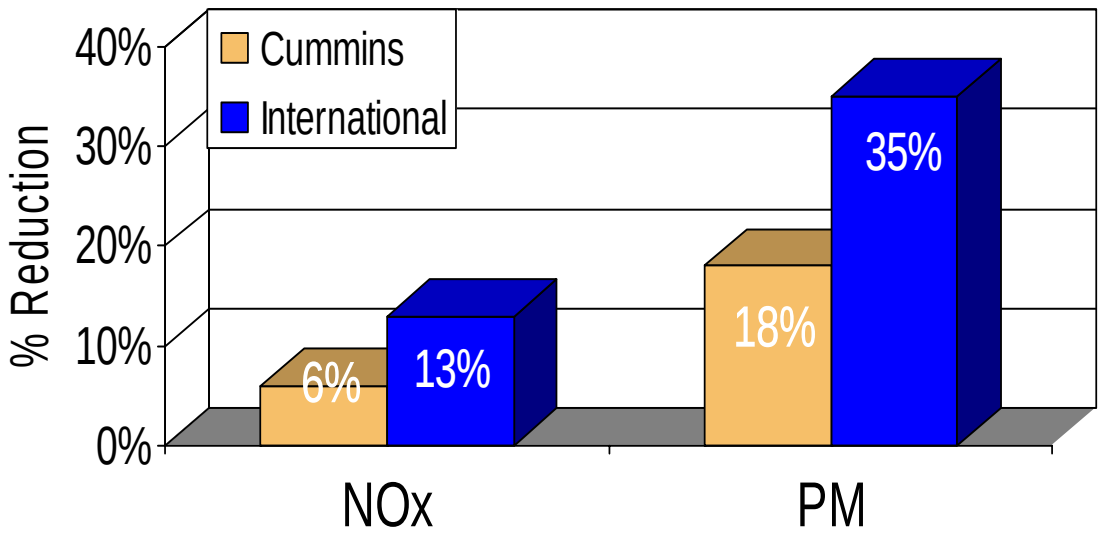
- Demonstration of Advanced Diesel Emission Control System in Low-Sulfur Diesel-Fueled Heavy-Duty Engines to Meet 2010 Heavy-Duty Emission Standards
- SCAQMD Board Awarded Two Contracts to
  - Cummins (Heavy EGR + NOx Adsorber + PM Trap)
  - West Virginia University/MACK (Heavy EGR + SCR + PM Trap)
- Total Project Cost - $5.2 Million ($1 M from AQMD)
- Partnering with U.S. DOE and CARB

Next Generation NGV Projects

- National/International Research Efforts
- Projects to Develop 0.5 and 0.2 g/bhp-hr NOx Engines Prior to 2007
- Cummins – 8.3L C Gas Plus Engine
  - Status: June 2005, 0.2 NOx, 0.01 PM
- Mack – 12L Engine
  - Status: 1st Quarter 2006, 0.5 NOx, 0.01 PM
- Cummins Westport – Market Assessment
  - Status: 4th Quarter 2004

Gas-to-Liquid (GTL) Projects

- Demonstration of GTL Fuel In Unmodified HD Trucks With Johnson Matthey PM Traps In Six 7.6L International Engines
- Development/Demonstration of GTL Fuel In HD Engines With PM/NOx Aftertreatment In Two Cummins ISM Engines



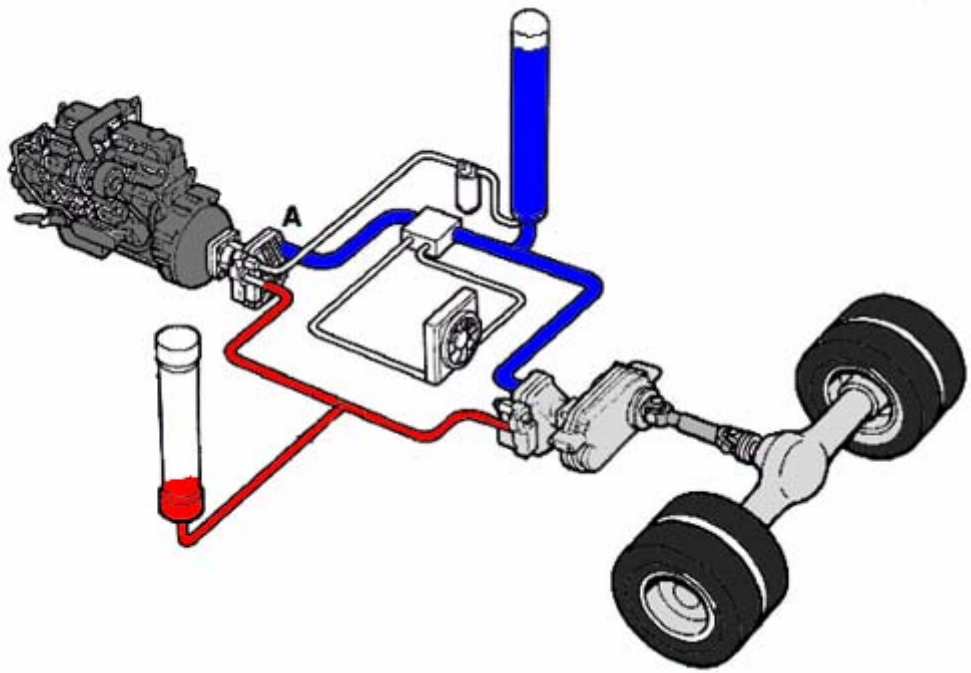
Plug-In Hybrid Electric Vehicles

- Design, Build, and Field Test Five Prototype PHEV Sprinter Vans with at Least 20 Miles of Electric range.
  - Emphasis on Commercialization
  - Modular Concept Allows Engine & Battery Flexibility

- Partnering with EPRI, DaimlerChrysler, DOT, LIPA, SCE, CARB, NYPA, & MEC (Kansas)
- OEM Partner – Mercedes-Benz Van Group (MB Van) of DaimlerChrysler

Natural Gas Hydraulic-Hybrids

- Two projects: Parallel and Series Hybrids for waste haulers
- Series Partners: Waste Management & Parker Hannifin
- Parallel Partners: Dana Systems, CalStart & PermoDrive
- Emissions 20% - 40% ⬇
- Fuel savings 20% - 50%
- Brake life 80% ⬆



California Hydrogen Highway Network

- CA Gov. Executive Order S-7-04 Signed April 20, 2004
- AQMD Participating on Advisory Panel and Working Groups

CALIFORNIA HYDROGEN HIGHWAY NETWORK

AQMD

Caltrans

California Fuel Cell Partnership
Driving for the Future

California Stationary Fuel Cell Collaborative

ChevronTexaco

stuartenergy

BMW

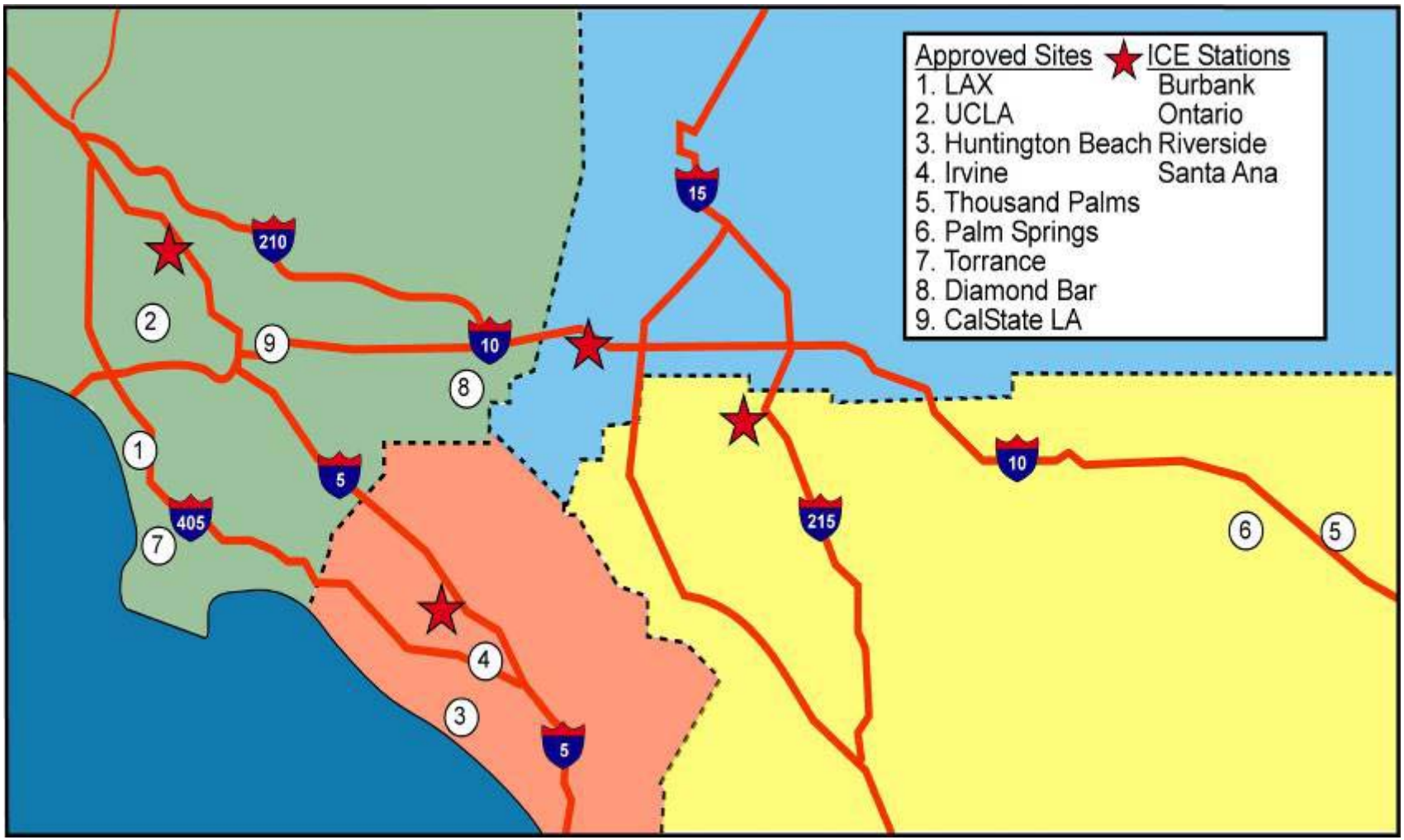
Ford

HONDA

UCDAVIS

NRDC

Hydrogen Infrastructure



SCAQMD Hydrogen Station

Fueling Dispenser

Electrolyzer

Hydrogen ICE Vehicle and Fueling Infrastructure Project

- Development and Demonstration of Hydrogen Internal Combustion Engine Vehicles (ICE)
- Installation of Public Hydrogen Fueling Stations At Different Cities Totaling 35 Vehicles
- Vehicle Conversions Awarded To Quantum Technologies

Clean Air Can't Wait

www.aqmd.gov/tao